

What Is Claimed Is:

1 1. A method for providing centralized collateral management between a
2 group of users, wherein each of the users has a portfolio of assets within a
3 network of obligations, and wherein each of the users has a sub-portfolio of
4 obligations with respect to each other, comprising the steps of:

5 (1) determining a mark to market (MTM) value for each of the sub-
6 portfolios;

7 (2) providing MTM Collateral Credits up to the MTM gains on each
8 of the sub-portfolios;

9 (3) notifying the users of their respective total collateral obligations;

10 (4) notifying the users of the value of their respective MTM Collateral
11 Credits;

12 (5) receiving any required collateral from each of the users; and

13 (6) allocating said received collateral against the sub-portfolios of
14 each of the users;

15 whereby the total amount of collateral posted by each of the users is
16 minimized by said MTM Collateral Credits and is used to protect against actual
17 losses due to the potential inability of the collateral provider to fulfill its
18 obligations.

1 2. The method of claim 1, wherein step (1) comprises the steps of:

2 (a) obtaining, directly from at least one of the users, market positions
3 for each asset contained in its sub-portfolio; and

4 (b) obtaining market data in order to value each of said market
5 positions.

1 3. The method of claim 1, wherein step (1) comprises the step of:

2 obtaining, directly from at least one of the users, said MTM value for its
3 sub-portfolio.

1 4. The method of claim 1, wherein step (1) comprises the step of:
2 obtaining, directly from an external service, said MTM value for at least
3 one of the sub-portfolios.

1 5. The method of claim 1, wherein step (2) comprises the step of:
2 calculating the value of said MTM Collateral Credits using the following
3 equation:

$$\sum_{i=1}^N \max\{MTM_{ji}, 0\}$$

5 wherein MTM_{ji} is said MTM value for the sub-portfolio of obligations between
6 a user j and a user i , and N is the total number of users with whom said user j has
7 existing obligations.

1 6. The method of claim 1, wherein said collateral received in step (5)
2 corresponds to at least one of the following collateral assets:

- 3 (i) cash;
- 4 (ii) securities;
- 5 (iii) letters of credit;
- 6 (iv) parent guarantees; and
- 7 (v) self guarantees.

1 7. The method of claim 1, wherein step (6) comprises the step of:
2 allocating said received collateral between each of the sub-portfolios using
3 rehypothecation.

1 8. The method of claim 1, wherein risk is not mutualized among the group
2 of users.

1 9. The method of claim 1, wherein risk is mutualized among the group of
2 users.

1 10. The method of claim 1, wherein each of the users has a sub-portfolio of
2 assets that derive at least in part from over the counter trading.

1 11. The method of claim 10, wherein risk is mutualized among the group of
2 users.

1 12. A method for providing centralized collateral management between a
2 group of users, wherein each of the users has a portfolio of assets within a
3 network of obligations, and wherein each of the users has a sub-portfolio of
4 obligations with respect to each other, comprising the steps of:

5 (1) determining a mark to market (MTM) value for each of the sub-
6 portfolios;

7 (2) determining an anticipatory collateral value for the portfolios and
8 sub-portfolios of each of the users;

9 (3) providing Anticipatory Collateral Credits to each of the users
10 based on the difference between said anticipatory collateral value of the sub-
11 portfolios and portfolios of each of the users;

12 (4) notifying the users of their respective total collateral obligations;

13 (5) notifying the users of the value of their respective said
14 Anticipatory Collateral Credits;

15 (6) receiving any required collateral from each of the uses; and

16 (7) allocating said received collateral against the sub-portfolios of
17 each of the users;

18 whereby the amount of collateral posted by each of the users is minimized
19 by said Anticipatory Collateral Credits and is used to protect against potential
20 future losses due to the potential inability of the collateral provider to fulfill its
21 obligations.

1 13. The method of claim 12, wherein step (2) comprises the step of:
2 determining said anticipatory collateral value for the portfolios and sub-
3 portfolios by performing one of the following Value at Risk methods:

- 4 (i) variance-covariance;
5 (ii) Monte Carlo simulation; and
6 (iii) historical.

1 14. The method of claim 13, wherein step (2) further comprises the step of:
2 refining said anticipatory collateral value determination for each of the
3 portfolios and sub-portfolios by performing one of the following refinement
4 methods:

- 5 (iv) fundamental models;
6 (v) scenario testing; and
7 (vi) stress testing.

1 15. The method of claim 12, wherein step (2) comprises the step of:
2 calculating said anticipatory collateral value, AC , for each of the portfolios
3 and sub-portfolios using the following equation:

$$AC = P * \sigma * N'(CI)$$

4
5 wherein P is said MTM value for the sub-portfolio or portfolio, σ is the volatility
6 value for the sub-portfolio or portfolio, $N'()$ is the inverse normal probability
7 distribution, and CI is a pre-selected confidence interval.

1 16. The method of claim 15, wherein step (3) comprises the step of:
2 calculating the value of said Anticipatory Collateral Credits using the
3 following equation:

4
$$\sum_{i=1}^N AC_{ji} - AC_{jp}$$

5 wherein AC_{jp} is said anticipatory collateral value for the entire portfolio of a user
6 j , AC_{ji} is said anticipatory collateral value for a sub-portfolio of obligations
7 between said user j and a user i , and N is the total number of users with whom
said user j has existing obligations.

1 17. The method of claim 12, wherein step (4) comprises the step of:
2 dynamically calculating said anticipatory collateral value for the portfolios
3 and sub-portfolios at each of least one of the following time intervals:

- 4 (i) daily;
5 (ii) weekly;
6 (iii) monthly; and
7 (iv) a pre-selected time interval value.

1 18. The method of claim 12, wherein step (7) comprises the step of:
2 allocating said received collateral between each of the sub-portfolios using
3 rehypothecation.

1 19. The method of claim 12, wherein risk is not mutualized among the group
2 of users.

1 20. The method of claim 12, wherein risk is mutualized among the group of
2 users.

1 21. The method of claim 12, wherein each of the users has a sub-portfolio of
2 assets that derive at least in part from over the counter trading.

1 22. The method of claim 21, wherein risk is mutualized among the group of
2 users.

1 23. The method of claim 12, further comprising the steps of:

2 (8) providing MTM Collateral Credits up to the MTM gains on each
3 of the sub-portfolios; and

4 (9) notifying the users of the value of their respective MTM Collateral
5 Credits.

1 24. A computer program product comprising a computer usable medium
2 having control logic stored therein for causing a computer to provide centralized
3 collateral management between a group of users, wherein each of the users has
4 a portfolio of assets within a network of obligations, and wherein each of the
5 users has a sub-portfolio of obligations with respect to each other, said control
6 logic comprising:

7 first computer readable program code means for causing the computer to
8 determine a mark to market (MTM) value for each of the sub-portfolios;

9 second computer readable program code means for causing the computer
10 to provide MTM Collateral Credits up to the MTM gains on each of the sub-
11 portfolios;

12 third computer readable program code means for causing the computer to
13 notify the users of their respective total collateral obligations;

14 fourth computer readable program code means for causing the computer
15 to notify the users of the value of their respective MTM Collateral Credits;

16 fifth computer readable program code means for causing the computer to
17 acknowledge receipt of any required collateral from each of the users; and

18 sixth computer readable program code means for causing the computer to
19 allocate said received collateral against the sub-portfolios of each of the users;

20 whereby the total amount of collateral posted by each of the users is
21 minimized by said MTM Collateral Credits and is used to protect against actual
22 losses due to the potential inability of the collateral provider to fulfill its
23 obligations.

1 25. A computer program product comprising a computer usable medium
2 having control logic stored therein for causing a computer to provide centralized
3 collateral management between a group of users, wherein each of the users has
4 a portfolio of assets within a network of obligations, and wherein each of the
5 users has a sub-portfolio of obligations with respect to each other, said control
6 logic comprising:

7 first computer readable program code means for causing the computer to
8 determine a mark to market (MTM) value for each of the sub-portfolios;

9 second computer readable program code means for causing the computer
10 to determine an anticipatory collateral value for the portfolios and sub-portfolios
11 of each of the users;

12 third computer readable program code means for causing the computer to
13 provide Anticipatory Collateral Credits to each of the users based on the
14 difference between said anticipatory collateral value of the sub-portfolios and
15 portfolios of each of the users;

16 fourth computer readable program code means for causing the computer
17 to notify the users of their respective total collateral obligations;

18 fifth computer readable program code means for causing the computer to
19 notify the users of the value of their respective said Anticipatory Collateral
20 Credits;

21 sixth computer readable program code means for causing the computer to
22 acknowledge receipt any required collateral from each of the uses; and

23 seventh computer readable program code means for causing the computer
24 to allocate said received collateral against the sub-portfolios of each of the users;

25 whereby the amount of collateral posted by each of the users is minimized
26 by said Anticipatory Collateral Credits and is used to protect against potential
27 future losses due to the potential inability of the collateral provider to fulfill its
28 obligations.

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